Using the best science

Picking up the pieces is never easy. Making those pieces fit better is really hard. But that's what we did.

"The 'harmonization' program DPR had with U.S. EPA in the early 1990s hadn't worked out," said DPR Director Paul Helliker. "We dusted off the pieces and built a new program. "Harmonizing wasn't very practical, but sharing information and data review is. Now each agency benefits by focusing on its particular area of expertise."

This kind of collaboration avoids duplication, maximizes scarce resources, and "enhances the quality of our science," Helliker said. Now called "worksharing," the rejuvenated project has three elements: concurrent review, joint data review, and tolerance review for "minor crops" (the kinds of fruit, nut and vegetable crops that are the core of California's agricultural economy).

"Even with DPR's budget cuts, we will continue to provide our data evaluations to U.S. EPA," said Helliker of the concurrent review program. This saves U.S. EPA time, and pesticide users benefit because new products get to market faster.

"The same for goes joint data review, in which U.S. EPA, DPR and Health Canada split up the workload of evaluating data for a reduced-risk pesticide," Helliker said.

DPR scientists and technical staff also participate in several U.S. EPA scientific and technical policy development workgroups, Helliker added, "presenting California's perspective so we can work out differences in methodology and philosophy before registration decisions are made."

The most exciting workshare element focuses on tolerance review and has a third partner in IR-4, a U.S. Department of Agriculture program that helps develop and register pesticides for minor crops. IR-4 provides the residue data and DPR does the scientific reviews that U.S. EPA uses to establish the allowable residue levels on fresh produce that makes it safe for human consumption.

Between 1999 and 2001, DPR's data reviews expedited the federal registration of 15 pesticides on 85 California commodities representing more than $6.6 billion to the state's farm economy. What's next on the worksharing agenda? Developing dietary risk evaluations for U.S. EPA to reduce further the time needed to register pesticides.

Helliker concluded, "What I am most proud of is moving worksharing from a management initiative to the scientist-to-scientist level. We are building relationships, credibility and mutual respect that won't easily fade away."

DATA COLLECTION COMPLETE: By 2000, DPR had completed collection of required health effects data on a priority list of 200 pesticides of highest health concern. The mandate to collect data came with the 1984 passage of the Birth Defect Prevention Act. DPR is also completing risk assessments and risk reduction measures on the highest-risk chemicals. Additionally, DPR completed collection of data (required by the Pesticide Contamination Prevention Act of 1985) designed to help predict which pesticides might pollute ground water.

FINE-TUNING PROTECTION: In the only program of its kind in the nation, DPR designs and conducts field studies to more accurately determine worker exposure to pesticides. From 1997 to 2001, DPR scientists collected foliage samples from various crops at the expiration of the restricted entry interval to verify that residues had degraded to the safe levels expected. This helps ensure that workers are not overexposed. (A restricted entry interval is the period that must elapse before workers can re-enter treated fields.) DPR monitored a wide range of crops and chemicals, including several highly toxic organophosphates, various fungicides, and some newer chemicals for which data may be limited.

DPR scientists are pioneers in the development of methods to monitor pesticide exposure, with particular attention to new exposure situations. DPR's risk assessors use the data to more accurately evaluate exposure, and this results in more finely tuned protection for workers and consumers. The studies also help determine if the protective measures on the product label are sufficient, or how they can be improved. For example, the studies can answer questions about what kinds of gloves offer the best protection to rose or strawberry harvesters, and whether the air filtering equipment on closed-cab tractors can effectively filter out pesticide particles.

DPR's staff includes scientists from a number of disciplines, including more than 30 toxicologists and more than 85 environmental scientists, including risk assessors and modelers. Long considered the peer of their colleagues at U.S. EPA, DPR's scientists and technical experts also are on par with their counterparts in Canada and the European Union. Their professionalism and expertise has been recognized with their appointment to many national and international scientific committees, and by publication in peer-reviewed journals.

COMMITTEES

FIFRA Scientific Advisory Panels on aggregate/ cumulative exposure assessments
2003 International Workshop on Applying Probabilistic Methods to Exposure Assessment for Agricultural Workers
Risk Assessment and Methodology Steering Committee, International Life Sciences Institute (ILSI)
Expert Panel on Mode/Mechanism of action information to assess human relevance of animal tumors
Agricultural Reentry Task Force
Joint Regulatory Steering Committee
Outdoor Residential Exposure Task Force
Joint Regulatory Steering Committee
Agricultural Handlers Exposure Task Force
Joint Regulatory Steering Committee
Co-operative Re-evaluation/Re-registration of Heavy Duty Wood Preservatives (e.g., Chromated Copper Arsenate, Creosote) with Health Canada and USEPA
Non-Dietary Exposure Task Force
Joint Regulatory Steering Committee
NIOSH SENSOR Meetings
Drift Task Force
ASAE S525 Review Committee
DAS Vector Control Advisory Committee
Farm Worker Health Initiative Focus Group (S.D.)
Ag Workers Health Collaborative Alliance (SCruz)
EPIC Committee
Editorial Board of Pesticide Science, formerly known as Pest Management Science
International Advisory Board of Pesticide Outlook
Associate Editor, Handbook of Pesticide Toxicology
Associate Editor, Encyclopedia of Agrochemicals
Consultant Roster, AIBS (American Institute of Biological Sciences)
Editorial Board, Society of Environmental Toxicology and Chemistry
Consultant to Science Advisory Board, USEPA

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